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Don Michael

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[54] REGIONAL PERFUSION CATHETER WITH IMPROVED DRUG DELIVERY CONTROL

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Related U.S. Application Data

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[51] **Int. Cl.**[5] **A61M 29/00**

[52] **U.S. Cl.** **604/101**; 606/192; 606/194; 604/265; 128/207.15

[58] **Field of Search** 604/96–103, 604/890.1, 264, 265; 606/191, 192, 194; 623/1, 12; 128/207.15

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[57] **ABSTRACT**

A medical or biological treatment device for creating a controlled "minienvironment" and which supplies a treatment or diagnostic modality to a region of a physiologic passage, the device including: a catheter having an outer surface, a distal end and a proximal end and having a blood bypass flow passage extending from the outer surface of the catheter at a first location between the proximal and distal ends and along the interior of the catheter to a location spaced distally from the first location; an inflatable balloon extending around the catheter and secured at the outer surface of the catheter; and a perforated fluid transfer member carried by the catheter and secured at the outer surface of the catheter between the balloon and the first location for permitting transfer of fluid to and from a region surrounding the fluid transfer member. The delivery system is designed to deliver one or more agents whose concentration can be varied to obtain an optimal effect in a "minienvironment" and to maintain nontoxic concentrations at other sites in the body.

14 Claims, 2 Drawing Sheets